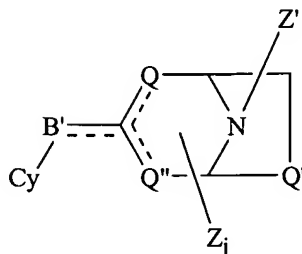


# AMENDMENT

## In the Claims:

1. (Currently amended) A compound having the structure represented by the formula:



wherein Cy represents a 5 or 6 member aromatic ring or substituted 5 or 6 member aromatic ring,

B' is ethylenic, or acetylenic,

Q is  $(CH_2)_m$ , Q' is  $(CH_2)_p$ , and Q'' is  $(CH_2)_q$  where m is 1, 2, 3 or 4, p is 0, 1, 2 or 3, and q is 0, 1 or 2, and the values of m, p and q are selected such that the azabicyclic ring shown in the structure contains 7 members, and either p or q is 1;

Z represents a non-hydrogen substituent group selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo,  $-NR'R''$ ,  $-CF_3$ ,  $-OH$ ,  $-CN$ ,  $-NO_2$ ,  $-C_2R'$ ,  $-SH$ ,  $-SCH_3$ ,  $-N_3$ ,  $-SO_2CH_3$ ,  $-OR'$ ,  $-SR'$ ,  $-C(=O)NR'R''$ ,  $-NR'C(=O)R'$ ,  $-C(=O)R'$ ,  $-C(=O)OR'$ ,  $-(CH_2)_xOR'$ ,  $-OC(=O)R'$ ,  $-(CR'R'')_xOCH_2C_2R'$ ,  $-(CR'R'')_xC(=O)R'$ ,  $-O(CR'R'')_xC(=O)R'$ ,  $-C_2(CR'R'')_xOR'$ ,  $-(CR'R'')_xNR'R''$ ,  $-OC(=O)NR'R''$  and  $-NR'C(=O)OR'$ ,

wherein x is an integer from 1 to 6,

R' and R'' are individually hydrogen or  $C_1$ - $C_8$  alkyl, an aromatic group-containing species or a substituted aromatic group-containing species, where the aromatic group-containing species are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl, or

R' and R'' can form a cycloalkyl functionality,

any of the foregoing groups indicated as being substituted can be suitably substituted with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy, halo, and amino substituents,

$j$  is an integer from 0 to 5,

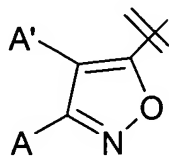
Z' represents hydrogen or lower alkyl,

the dotted lines in the structure signify carbon-carbon single bonds and

ethylenic is  $-CE'=CE''-$ , wherein E' and E'' are hydrogen or a non-hydrogen substituent as defined above with respect to Z, and acetylenic is  $-C\equiv C-$ ,

wherein the term "substituted" as applied to the terms "substituted alkyl, substituted alkenyl, substituted heterocyclyl, substituted cycloalkyl, substituted aryl, substituted alkylaryl, arylalkyl, and substituted arylalkyl refers to one or more alkyl, hydroxy, alkoxy, halo or amino substituents.

2. (Previously presented) The compound of Claim 1 wherein Cy is:



wherein A and A' individually are either hydrogen or suitable non-hydrogen substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo,  $-NR'R''$ ,  $-CF_3$ ,  $-OH$ ,  $-CN$ ,  $-NO_2$ ,  $-C_2R'$ ,  $-SH$ ,  $-SCH_3$ ,  $-N_3$ ,  $-SO_2CH_3$ ,  $-OR'$ ,  $-SR'$ ,  $-C(=O)NR'R''$ ,  $-NR'C(=O)R'$ ,  $-C(=O)R'$ ,  $-C(=O)OR'$ ,  $-(CH_2)_xOR'$ ,  $-OC(=O)R'$ ,  $-(CR'R'')_xOCH_2C_2R'$ ,  $-(CR'R'')_xC(=O)R'$ ,  $-O(CR'R'')_xC(=O)R'$ ,  $-C_2(CR'R'')_xOR'$ ,  $-(CR'R'')_xNR'R''$ ,  $-OC(=O)NR'R''$  and  $-NR'C(=O)OR'$ ,

wherein x is an integer from 1 to 6,

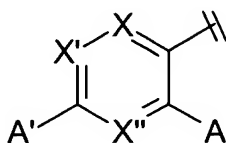
R' and R'' are individually hydrogen or  $C_1$ - $C_8$  alkyl, an aromatic group-containing species or a substituted aromatic group-containing species, where the aromatic group-containing species

are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl,  
or

R' and R'' can form a cycloalkyl functionality, and

any of the foregoing groups indicated as being substituted can be suitably substituted  
with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy,  
halo, and amino substituents.

3. (Previously presented) The compound of Claim 1 wherein Cy is



X, X' and X'' are individually nitrogen, nitrogen bonded to oxygen or carbon bonded to a  
substituent species characterized as having a sigma m value between about -0.3 and about 0.75,  
A and A' individually are either hydrogen or suitable non-hydrogen substituent species having a  
sigma m value between about -0.3 and about 0.75,

wherein substituent species having a sigma m value between about -0.3 and about 0.75  
are selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted  
alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl,  
substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo, -NR'R'', -  
CF<sub>3</sub>, -OH, -CN, -NO<sub>2</sub>, -C<sub>2</sub>R', -SH, -SCH<sub>3</sub>, -N<sub>3</sub>, -SO<sub>2</sub>CH<sub>3</sub>, -OR', -SR', -C(=O)NR'R'', -  
NR'C(=O)R', -C(=O)R', -C(=O)OR', -(CH<sub>2</sub>)<sub>x</sub>OR', -OC(=O)R', -(CR'R'')<sub>x</sub>OCH<sub>2</sub>C<sub>2</sub>R', -  
(CR'R'')<sub>x</sub>C(=O)R', -O(CR'R'')<sub>x</sub>C(=O)R', -C<sub>2</sub>(CR'R'')<sub>x</sub>OR', -(CR'R'')<sub>x</sub>NR'R'', -OC(=O)NR'R'' and -  
NR'C(=O)OR' ,

wherein x is an integer from 1 to 6,

R' and R'' are individually hydrogen or C<sub>1</sub>-C<sub>8</sub> alkyl, an aromatic group-containing species  
or a substituted aromatic group-containing species, where the aromatic group-containing species  
are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl,  
or

R' and R'' can form a cycloalkyl functionality, and

any of the foregoing groups indicated as being substituted can be suitably substituted with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy, halo, and amino substituents.

4. (Original) The compound of Claim 3 wherein X" is nitrogen.
5. (Original) The compound of Claim 3 wherein X" is selected from the group consisting of CNO<sub>2</sub>, CNH<sub>2</sub>, CNHCH<sub>3</sub> and CN(CH<sub>3</sub>)<sub>2</sub>.
6. (Original) The compound of Claim 3 wherein X' and X" are nitrogen.
7. (Original) The compound of Claim 3 wherein Cy represents a 3-pyridyl moiety.
8. (Previously Presented) A compound selected from the group consisting of:  
(E)- and (Z)-5-(2-(7-azabicyclo[2.2.1]hept-2-yl)ethenyl)isoxazole and  
(E)- and (Z)-5-(2-(7-azabicyclo[2.2.1]hept-2-yl)ethenyl)-3-methylisoxazole.
9. (Currently amended) A compound selected from the group consisting of:  
(E)- and (Z)-2-(2-(3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-methoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-ethoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-isopropoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-isobutoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-phenoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-benzyloxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-methoxymethyl-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-phenyl-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane, and  
(E)- and (Z)-2-(2-(5-hydroxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane.
10. (Currently amended) A compound selected from the group consisting of:  
2-(2-(3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,

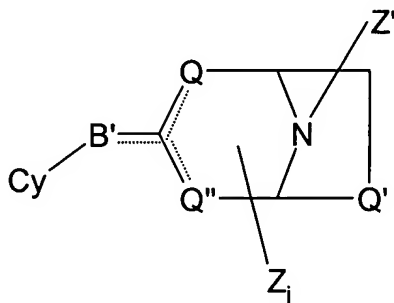
2-(2-(5-methoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-ethoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-isopropoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-isobutoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-phenoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-benzyloxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-methoxymethyl-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-phenyl-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane, and  
2-(2-(5-hydroxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane.

11. (Original) The compound of Claim 1 wherein m is 1, 2 or 3.
12. (Original) The compound of Claim 1 wherein p is 0, 1 or 2.
13. (Original) The compound of Claim 1 wherein q is 0 or 1.
14. (Currently amended) The compound of Claim 1 wherein  $j_j$  is 0 or 1.
15. (Original) The compound of Claim 1 wherein B' is ethylenic.
16. (Original) The compound of Claim 1 wherein B' is acetylenic.
17. (Cancelled)
18. (Currently amended) The compound of Claim 1 wherein  $j_j$  is 0; Z' is hydrogen or lower alkyl; m is 1, 2 or 3; q is 0 or 1; p is 1 or 2; and each of E' and E" is hydrogen.
19. (Original) The compound of Claim 18 wherein the sum of m and q is 3 or less.
20. (Previously presented) The compound of Claim 1 wherein Cy is 3-pyridinyl unsubstituted or substituted in the 5 and/or 6 position(s), 5-pyrimidinyl unsubstituted or

substituted in the 2 position, or 3- or 5-isoxazolyl unsubstituted or substituted in the 4 and/or 5 and 3 and/or 4 positions respectively.

21 - 40. (Cancelled)

41. (Currently amended) A pharmaceutical composition comprising an effective amount of a compound having the structure represented by the formula:



wherein Cy represents a 5 or 6 member aromatic ring or a substituted 5 or 6 member aromatic ring,

B' is ethylenic, or acetylenic,

Q is  $(CH_2)_m$ , Q' is  $(CH_2)_p$ , and Q'' is  $(CH_2)_q$  where m is 1, 2, 3 or 4, p is 0, 1, 2 or 3, and q is 0, 1 or 2, and the values of m, p and q are selected such that the azabicyclic ring shown in the structure contains 7 members, and either p or q is 1,

Z represents a non-hydrogen substituent group selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo,  $-NR'R''$ ,  $-CF_3$ ,  $-OH$ ,  $-CN$ ,  $-NO_2$ ,  $-C_2R'$ ,  $-SH$ ,  $-SCH_3$ ,  $-N_3$ ,  $-SO_2CH_3$ ,  $-OR'$ ,  $-SR'$ ,  $-C(=O)NR'R''$ ,  $-NR'C(=O)R'$ ,  $-C(=O)R'$ ,  $-C(=O)OR'$ ,  $-(CH_2)_xOR'$ ,  $-OC(=O)R'$ ,  $-(CR'R'')_xOCH_2C_2R'$ ,  $-(CR'R'')_xC(=O)R'$ ,  $-O(CR'R'')_xC(=O)R'$ ,  $-C_2(CR'R'')_xOR'$ ,  $-(CR'R'')_xNR'R''$ ,  $-OC(=O)NR'R''$  and  $-NR'C(=O)OR'$ ,

wherein x is an integer from 1 to 6,

R' and R'' are individually hydrogen or  $C_1$ - $C_8$  alkyl, an aromatic group-containing species or a substituted aromatic group-containing species, where the aromatic group-containing species

are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl,  
or

R' and R" can form a cycloalkyl functionality,

any of the foregoing groups indicated as being substituted can be suitably substituted  
with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy,  
halo, and amino substituents,

$j$  is an integer from 0 to 5,

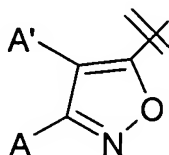
Z' represents hydrogen or lower alkyl,

the dotted lines in the structure signify carbon-carbon single bonds and

ethylenic is  $-CE'=CE''-$ , wherein E' and E'' are hydrogen or a non-hydrogen substituent as  
defined above with respect to Z, and acetylenic is  $-C\equiv C-$ ,

wherein the term "substituted" as applied to the terms "substituted alkyl, substituted  
alkenyl, substituted heterocyclyl, substituted cycloalkyl, substituted aryl, substituted alkylaryl,  
arylalkyl, and substituted arylalkyl refers to one or more alkyl, hydroxy, alkoxy, halo or amino  
substituents.

42. (Previously presented) The pharmaceutical composition of Claim 41 wherein Cy  
is:



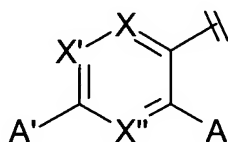
wherein A and A' individually are either hydrogen or suitable non-hydrogen substituent species  
selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl,  
heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl,  
alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo,  $-NR'R''$ ,  $-CF_3$ ,  $-OH$ ,  $-CN$ ,  $-NO_2$ ,  $-C_2R'$ ,  $-SH$ ,  $-SCH_3$ ,  $-N_3$ ,  $-SO_2CH_3$ ,  $-OR'$ ,  $-SR'$ ,  $-C(=O)NR'R''$ ,  $-NR'C(=O)R'$ ,  $-C(=O)R'$ ,  $-C(=O)OR'$ ,  $-(CH_2)_xOR'$ ,  $-OC(=O)R'$ ,  $-(CR'R'')_xOCH_2C_2R'$ ,  $-(CR'R'')_xC(=O)R'$ ,  $-O(CR'R'')_xC(=O)R'$ ,  $-C_2(CR'R'')_xOR'$ ,  $-(CR'R'')_xNR'R''$ ,  $-OC(=O)NR'R''$  and  $-NR'C(=O)OR'$ ,  
wherein x is an integer from 1 to 6,

R' and R" are individually hydrogen or C<sub>1</sub>-C<sub>8</sub> alkyl, an aromatic group-containing species or a substituted aromatic group-containing species, where the aromatic group-containing species are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl, or

R' and R" can form a cycloalkyl functionality, and

any of the foregoing groups indicated as being substituted can be suitably substituted with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy, halo, and amino substituents.

43. (Previously presented) The pharmaceutical composition of Claim 41 wherein Cy is



X, X' and X'' are individually nitrogen, nitrogen bonded to oxygen or carbon bonded to a substituent species characterized as having a sigma m value between about -0.3 and about 0.75, A and A' individually are either hydrogen or suitable non-hydrogen substituent species having a sigma m value between about -0.3 and about 0.75,

wherein substituent species having a sigma m value between about -0.3 and about 0.75 are selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo, -NR'R'', -CF<sub>3</sub>, -OH, -CN, -NO<sub>2</sub>, -C<sub>2</sub>R', -SH, -SCH<sub>3</sub>, -N<sub>3</sub>, -SO<sub>2</sub>CH<sub>3</sub>, -OR', -SR', -C(=O)NR'R'', -NR'C(=O)R', -C(=O)R', -C(=O)OR', -(CH<sub>2</sub>)<sub>x</sub>OR', -OC(=O)R', -(CR'R'')<sub>x</sub>OCH<sub>2</sub>C<sub>2</sub>R', -(CR'R'')<sub>x</sub>C(=O)R', -O(CR'R'')<sub>x</sub>C(=O)R', -C<sub>2</sub>(CR'R'')<sub>x</sub>OR', -(CR'R'')<sub>x</sub>NR'R'', -OC(=O)NR'R'' and -NR'C(=O)OR',

wherein x is an integer from 1 to 6,

R' and R'' are individually hydrogen or C<sub>1</sub>-C<sub>8</sub> alkyl, an aromatic group-containing species or a substituted aromatic group-containing species, where the aromatic group-containing species



are selected from the group consisting of pyridinyl, quinolinyl, pyrimidinyl, phenyl, and benzyl,  
or

R' and R" can form a cycloalkyl functionality, and

any of the foregoing groups indicated as being substituted can be suitably substituted  
with at least one substituent group selected from the group consisting of alkyl, hydroxyl, alkoxy,  
halo, and amino substituents.

44. (Original) The pharmaceutical composition of Claim 43 wherein X" is nitrogen.

45. (Original) The pharmaceutical composition of Claim 43 wherein X" is selected  
from the group consisting of CNO<sub>2</sub>, CNH<sub>2</sub>, CNHCH<sub>3</sub> and CN(CH<sub>3</sub>)<sub>2</sub>.

46. (Original) The pharmaceutical composition of Claim 43 wherein X' and X" are  
nitrogen.

47. (Original) The pharmaceutical composition of Claim 43 wherein Cy represents a  
3-pyridyl moiety.

48. (Previously presented) The pharmaceutical composition of Claim 41 wherein the  
compound is selected from the group consisting of:

(E)- and (Z)-5-(2-(7-azabicyclo[2.2.1]hept-2-yl)ethenyl)isoxazole and

(E)- and (Z)-5-(2-(7-azabicyclo[2.2.1]hept-2-yl)ethenyl)-3-methylisoxazole.

49. (Currently amended) The pharmaceutical composition of Claim 41 wherein the  
compound is selected from the group consisting of:

(E)- and (Z)-2-(2-(3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-methoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-ethoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-isopropoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-isobutoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-phenoxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,

(E)- and (Z)-2-(2-(5-benzyloxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-methoxymethyl-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane,  
(E)- and (Z)-2-(2-(5-phenyl-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane, and  
(E)- and (Z)-2-(2-(5-hydroxy-3-pyridyl)ethenyl)-7-azabicyclo[2.2.1]heptane.

50. (Currently amended) The pharmaceutical composition of Claim 41 wherein the compound is selected from the group consisting of:

2-(2-(3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-methoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-ethoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-isopropoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-isobutoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-phenoxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-benzyloxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-methoxymethyl-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane,  
2-(2-(5-phenyl-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane, and  
2-(2-(5-hydroxy-3-pyridyl)ethynyl)-7-azabicyclo[2.2.1]heptane.

51. (Original) The pharmaceutical composition of Claim 41 wherein m is 1, 2 or 3.

52. (Original) The pharmaceutical composition of Claim 41 wherein p is 0, 1 or 2.

53. (Original) The pharmaceutical composition of Claim 41 wherein q is 0 or 1.

54. (Currently amended) The pharmaceutical composition of Claim 41 wherein  $j, j$  is 0 or 1.

55. (Original) The pharmaceutical composition of Claim 41 wherein B' is ethylenic.

56. (Original) The pharmaceutical composition of Claim 41 wherein B' is acetylenic.

57. (Cancelled)

58. (Currently amended) The pharmaceutical composition of Claim 41 wherein  $j$  is 0;  $Z'$  is hydrogen or lower alkyl;  $m$  is 1, 2 or 3;  $q$  is 0 or 1;  $p$  is 1 or 2; and each of  $E'$  and  $E''$  is hydrogen.

59. (Original) The pharmaceutical composition of Claim 68 wherein the sum of  $m$  and  $q$  is 3 or less.

60. (Previously presented) The pharmaceutical composition of Claim 41 wherein  $Cy$  is 3-pyridinyl unsubstituted or substituted in the 5 and/or 6 position(s), 5-pyrimidinyl unsubstituted or substituted in the 2 position, or 3- or 5-isoxazolyl unsubstituted or substituted in the 4 and/or 5 and 3 and/or 4 positions respectively.